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lunging with the same. This sort of composition I prefer to common dung. The trees have improved both in health and bearing, and produce much finer fruit. The wall is fourteen feet high, and the borders the same breadth. The common cropping of the borders is sallads, and a few bulbous roots. I consider heavy cropping with vegetables very hurtful for the trees, and it should be avoided if possible.

Should any of these remarks be of service, or found to add any thing to the general stock of knowledge of the Caledonian Horticultural Society, I shall feel myself gratified. I am at present engaged with some experiments, to ascertain what length of time pears and apples may be preserved in full perfection, &c.; and should any of them be found effectual, I shall take the earliest opportunity of communicating them to the society.

Account of a new Kind of Paint, applicable both to the Interior and Exterior of Habitations. By M. C. de la Vaux. In a letter to M. Belanger, Architect to his Royal Highness Monsieur.

[From the Journal de Physique.]

The author, who is always endeavouring to render science useful to the arts, published some time ago a method of *painting with milk*; but the process was expensive: he has now invented another, which cost very little, and is the object of this letter.

"You desire, my dear friend, some particulars respecting my new-invented paint, which in your opinion is a miracle of art.

"It is, indeed, excellent and durable, I should say unchangeable, if I did not fear to alarm the painters; equally proper to be employed both for the exterior and interior; for the best apartments as well as for the commonest purposes of house-painting; for preserving dry and healthy, buildings appropriated to large collections of the human race, or for animals; contributing indeed to the preservation of the edifices: such a paint is truly a miracle of art, especially since, from its low price, it is certain to be generally used. This paint partakes of all the properties of my *improved milk-paint*, which will be adopted by the rich, without being much dearer than the paint in question. My work on these interesting objects would have been published last year, but for the troubled state of our country. Now, however, that the

storm is succeeded by a calm, under the shield of the Bourbons, the proprietor, returned to his patrimony, will be occupied in repairing the damage it has sustained, and which will be very considerable in the countries that have suffered by the war.

"Painting will be more especially indispensable, and it cannot be too much insisted upon in places where the wretched objects attacked by the *Typhus* have expired, and even where they have only dwelt for a time. It will also be necessary in stables and out-houses that have contained infected cattle.

"They ought to be previously lime-washed, in order to demephitise every part; the action of quick-lime being not less powerful than fire.

"This beneficial and cheap material ought to be recommended to all Europe; for there are few countries in it which have not been the seat of war. House painting, as the paint is now composed, is both expensive and inconvenient, and would probably be delayed for these reasons, but which will not be the case if these objections are removed.

"As the inquiry of an economical mind is to know, in the first place, the cost of a thing, I shall set out with stating the price, and inscribing it in capitals. THE PRICE OF THE SQUARE FATHOM IS ONE CENTIME OF A FRANC: The proportions and process are as follows:

| | |
|--------------------------|--------------|
| Potatoes, | one pound. |
| Spanish white, | two pounds. |
| Water, | four quarts. |

"The potatoes are boiled in water or steam, (steam in the large way is the most economical and expeditious,) peeled, crushed, and while yet warm, tempered with two quarts of warm water. The mixture is then passed through a horse hair sieve, to free it from lumps and specks. When a large quantity is to be prepared at once, the mixture of potatoes and water must be put into a boiler for a quarter of an hour, in order to render the solution more complete, by a heat nearly approaching to ebullition.

"When in this state, the mixture is added to the Spanish white, previously mixed with two other quarts of water: but this proportion is not to be strictly kept, because a wood or wall, that has not been covered with preceding coats, absorbs more water, and requires a thinner paint.

"I will now give an instance in which

the above quantity was used. I caused to be painted a peristyle, ornamented with four handsome columns, of a single stone, bases, bronzes, capitals, cornices, two statues, the whole comprising six fathoms: two coats of paint were given to it, which we will call therefore twelve fathoms.

"This paint is of a fine milk-white. It may be rendered grey by the addition of a little pulverised charcoal; a yellow stone colour, more or less deep, by yellow ocre; and the colour of bricks by red ocre. The two coats may be put on in immediate succession without hurt, because no other paint dries so soon, at the same time that it spreads easily from the brush. A bed-chamber that is painted with it may be inhabited the same day; no damp, no smell is to be apprehended.

"How many years, or rather how many centuries, elapse, before the Arts are brought to their utmost simplicity, which at the same time is that of their improvement; and it is those arts of the oldest origin, the first invented, which have last arrived at this point. In enlightened times these are discoveries which infantise the new arts, at the same time that they renew the old ones.

"I had conceived the idea of this substitution of the mucilage of potatoes, so unchangeable, for the animal glues and oils which are so changeable; let us add also, for the varnishes, which are likewise so changeable. I was struck with astonishment at the simplicity of this method; but I have no sentiment of vanity in consequence: I recollect with humility the little girl who relieved the embarrassment of the philosopher, her neighbour, when distressed to find the means of carrying, without tongs or shovel, the fire he wished to take to his stove: she put a little of the ashes in her hand, and placed on it the burning coal. Of what use then is philosophy? cries the provoked philosopher; but I have not said the same of chemistry; for it was the theory of this art that informed me that the mucilage of potatoes, and the caseous part of milk, were the substances of all others to be preferred as bases for house-paint.

"With the above proportions, of one pound of potatoes and two of the white, we can give two coats of paint to a surface of six square fathoms; but as the potatoes are to be boiled, we should estimate

them at six centimes, which brings the price of twelve fathoms to twelve centimes.

"This is the paint, my dear Sir, which you are desirous of patronising; let us then unite against the natural enemies of such a discovery, since the public opinion will soon do it justice. Its natural enemies can only be the painters and builders, but they will soon be pacified, otherwise I should perhaps hesitate to publish a process prejudicial to a class of laborious citizens.

"Now let us begin by considering it as a part of domestic economy. A good economist will never give work to be done out of his family which he is able to do himself or by his servants. The American husbandman washes his wool, spins, dyes, and makes his garment of it; our economist will paint his own habitation. Suppose it offers a superficies of a hundred fathoms, which constitutes a good sized handsome house; it was built fifty years ago, and has not been painted on the outside, and fifty more most likely will elapse before it will be done again. But the intrinsic value of our paint being for two coats, which make two hundred fathoms, not more than two francs, he will certainly procure himself this enjoyment, and not only paint his house, but also his offices and out-houses, both inside and outside, for the sake of cleanliness, as well as a means of preservation and salubrity.

"Now when all the upper classes are thus painting and beautifying their houses, where is the peasant who having a cottage of eight or twelve fathoms of superficies, will not follow the example of employing this paint; for I repeat, it must of necessity become general, and that the consequence will be, that our villages at present so unneat, and the habitations of the peasants so dirty externally, and so disgusting internally, will assume the appearance of those of Belgium, where the towns and villages always seem to be newly built. But our peasant who would be able to paint his surface of twelve fathoms for three sous, will consent to give thirty to the village painter, who would employ two or three hours to perform it.

"It is a principle of government, that the lighter the taxes, the less there is of contraband trade, and in domestic economy, the less any commodity costs, the greater its consumption. Every one can make matches and starch, yet there is no

family, however indigent, which does not buy these articles on account of their very low price. It will be the same with this paint.

"But let us turn from the country to the towns, where the painter must be employed. Let us suppose a house of a hundred fathoms surface is to have two coats of paint, which makes it equal to two hundred fathoms. By giving it to be done by the piece, a workman will cover twenty fathoms per day; and will be content to gain three francs for it; thus the labour will be reduced to thirty francs for ten days.

"Now let us shew the advantage to the master, for it is to the masters we must address ourselves; we may estimate the expense of the ladders, utensils, &c. necessary to be employed for this paint, at two francs per day, which amounts to twenty francs for ten days. Thus we may paint a surface of one hundred fathoms with two coats, at the price of fifty francs.

"But now let us ask, why there should be two coats, when one is sufficient for the purpose of completely covering the surface, and filling up all the pores, for it is not the thickness of the paint which gives it body; therefore half this sum may be saved, and it may be reduced to twenty-five, or at least thirty francs.

"I did not think it proper to meddle with the interests of the painters and builders, without first submitting to them, and afterwards to the architect, these calculations. One painter said to me, that if the price of this paint was fixed at six sous per fathom, they would have as much profit by it as by employing the most expensive colours.

"The number of old houses to be repaired, increase every year both in towns and the country, and most of them are painted in distemper; but the best, after a few storms, is all washed off, and the next year exhibits nothing but a dirty wall. This distemper costs at least six sous, the distempers with which the inner apartments of inferior houses are covered, comes off with the slightest friction, and cost fifteen or twenty sous. No one, therefore, can hesitate to substitute for this fragile material, a paint which is equally cheap, and so much superior; and it is to be hoped that all classes may know how to take advantage of this new process, which I repeat is preferable to every other for body.

"It remains for time to decide on its du-

ration, but in the space of two years, applied externally, it has not undergone the slightest alteration, and I will insure it for ages, by applying to it the simple size or varnish which I have employed with astonishing success in my *milk paint*."

Meteoric Stones.

M. Marcel de Serres, who has written a history of the Fall of Stones from the clouds, printed in the late numbers of the Philosophical Magazine, concludes with the following observations.

"The causes of these phenomena, in appearance so remote, have nevertheless some approximation: thus rain is nothing but the precipitation of the water which is continually rising into the air; and aërolites probably only depend on the precipitation of an infinity of substances which are incessantly evaporating, and the re-action of which upon each other may form new combinations. This hypothesis will not appear gratuitous, if we pay attention to the immense quantity of compound substances which organic bodies, stagnant waters, and all bodies while under decomposition, exhale without ceasing, and which are lost in the air without our knowing any thing as to what they become. It is therefore fair to inquire what are the methods resorted to by nature to counterbalance this perpetual evaporation, and to purify the atmosphere from all those volatilized substances? In fact it is probable that nature employs other methods of purifying the air, though probably the organic bodies are the most powerful to which she resorts. Such are the principal proofs, or rather the most constant facts, which render probable the hypothesis of aërolites being formed in our atmosphere."

Singular Phenomenon.

Coloured snow and a coloured hoarfrost took place at Arezzo, March 1815. "Pliny and Livy have mentioned showers of burnt bricks, and much ridicule has been thrown upon them for it. During the evening, the ground being almost entirely covered with snow, there fell some snow, or rather hail, not very compact, of a reddish-yellow colour, which the people improperly called red.